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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,693	07/28/2003	Luc Struye	27500-169	5166

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EXAMINER	
SUNG, CHRISTINE	
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2884	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/628,693	STRUYE ET AL.	
	Examiner	Art Unit	
	Christine Sung	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,11-14,17,18,21,22,25,26,32-35,37,38 and 45-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,11-14,17,18,21,22,25,26,32-35,37,38 and 45-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. The amendment filed on November 7, 2007 has been accepted and entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6-7, 11-12, 34 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohda (US Pre Grant Publication 2002/0166977).

Regarding claim 1, Kohda discloses a stimulable phosphor screen or panel (Figure 19) suitable for use in mammographic applications comprising

a binderless phosphor layer (paragraph [0134]) having needle-shaped crystals (see figure 1, element 11), said layer not exceeding a layer thickness of 150 microns (see paragraph [0194]- discloses a phosphor thickness of 50-1000 microns), and

a support (element 211) wherein an intermediate layer arrangement of an X-ray absorbing foil (element 211a), farther from the support (element 211, element 215 is farther from the support than the x-ray absorbing foil), a stimulated light reflecting foil (element 215) is present between said support and said phosphor layer (element 215 is between the support, element 211 and the phosphor, element 212).

Regarding claims 6-7, Kohda discloses a stimulated light reflecting foil of aluminum layer is present (paragraph [0216]).

Regarding claims 11-12, Kohda discloses that the support is selected from the group consisting of ceramics, glass, aluminum and polymeric films (see paragraph [0233]).

Regarding claim 34, Kohda discloses a binderless (paragraph [0134]) stimulable phosphor screen or panel, wherein said needle-shaped phosphor crystals (figure 1, element 11) are crystals of an alkali metal phosphor (paragraph [0123]).

Regarding claim 37, Kohda discloses a binderless (paragraph [0134]) stimulable phosphor screen, wherein said alkali metal phosphor is a CsX:Eu stimulable phosphor, wherein X represents a halide selected from the group consisting of Br, Cl and I (see paragraph [0213]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2-5, 35, 38, 46-47, 51-52 and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohda (US Pre Grant Publication 2001/0166977) in view of Robinette (US Patent US 5091928 A).

Regarding claims 2-4, Kohda discloses the limitations set forth in claim 1, but does not specify that the x-ray absorbing layer comprises a lead compound that is a lead compound an oxide or a hydroxide of lead metal is dispersed in a binder and wherein said binder containing the lead compound is a matrix of a polycondensation product of a metal alkoxide species. Kohda also does not specify the particular binder or matrix of the absorbing layer. Robinette discloses a conventional lead oxide screen used with x-ray devices (abstract) and discloses the absorbing layer is made of a lead oxide dispersed in a binder (see abstract). The absorbing layer, disclosed by claims 2-4, is a well-known type of absorbing layer (see Robinette, abstract), thus one having ordinary skill in the art would be motivated to use the conventional lead screen disclosed by Robinette with the invention as disclosed by Kohda in order to decrease curling of the layer during manufacture.

Regarding claim 5, Robinette discloses that the X-ray absorbing layer is a layer of lead (see abstract).

Regarding claim 35, Kohda discloses a binderless (paragraph [0134]) stimulable phosphor screen or panel, wherein said needle-shaped phosphor crystals (figure 1, element 11) are crystals of an alkali metal phosphor (paragraph [0123]).

Regarding claim 38, Kohda discloses a binderless (paragraph [0134]) stimulable phosphor screen, wherein said alkali metal phosphor is a CsX:Eu stimulable phosphor, wherein X represents a halide selected from the group consisting of Br, Cl and I (see paragraph [0213]).

Regarding claims 46-47, Kohda in view of Robinette discloses the limitations set forth in claims 2 and 5, respectively, but does not specify that the x-ray absorbing foil or layer has a thickness in the range of 25 to 150 microns. However, it would have been obvious to one having ordinary skill in the art to have an absorbing foil within the claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the absorbing foil), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Regarding claims 51-52 Kohda in view of Robinette discloses the limitations set forth in claims 2 and 5, respectively, and further discloses a support made of PET (see paragraph [0233]), but does not specify the claimed thickness of the PET support. However, it would have been obvious to one having ordinary skill in the art to have PET substrate within the claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the PET substrate), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Regarding claims 56-57, Kohda discloses the limitations set forth in claims 2 and 5, respectively, Kohda further discloses that the support is an amorphous carbon (paragraph [0012]), but does not specify the claimed thickness of the carbon support. However, it would have been obvious to one having ordinary skill in the art to have a carbon substrate within the claimed thickness, since it has been held that where the general conditions of a claim are

disclosed in the prior art (Kohda discloses the carbon substrate), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

7. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohda (US Pre Grant Publication 2001/0166977) in view of Kano (US Patent 5,012,107 A).

Regarding claims 13-14, Kohda discloses the limitation disclosed in claim 1, but does not specify embossing the intermediate layer. However, embossing of the intermediate layer is a well-known technique used for identifying different detectors or for decorative purposes. Kano discloses a conventional phosphor screen or panel, wherein said intermediate layer arrangement has a surface that has been subjected to embossing for forming a fine concavo-convex pattern (column 7, lines 35-37). One having ordinary skill in the art, at the time the invention was made would have been motivated to modify the invention as disclosed by Kohda with the embossing technique disclosed by Kano in order to easily identify/label different detectors.

8. Claims 17-18, 21-22, 25-26, 45, 48-50, 53-55 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohda (US Pre Grant Publication 2001/0166977).

Regarding claims 17-18, 21-22 and 25-26, Kohda further discloses a two or more protective layers (Figure 2, elements 26 and 24). Although Kohda does not specify the exact positioning of the layer as disclosed in the instant claims, it would have obvious to one having ordinary skill in the art to have used a protective layer between the substrate and intermediate layers and/or between the phosphor and the intermediate layers in order to decrease the likelihood of damage from moisture exposure to the various layers of the detector.

Regarding claim 45, Kohda discloses the limitations set forth in claim 1, but does not specify that the x-ray absorbing foil or layer has a thickness in the range of 25 to 150 microns.

However, it would have been obvious to one having ordinary skill in the art to have an absorbing foil within the claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the absorbing foil), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Regarding claims 48-49, Kohda discloses the limitations set forth in claims 6 and 7, respectively, but does not specify that the aluminum layer has a thickness in the range of 0.5 to 5 Microns. However, it would have been obvious to one having ordinary skill in the art to have an aluminum layer within the claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the aluminum foil), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Regarding claims 50 and 53-54 Kohda discloses the limitations set forth in claims 1, 6 and 7, respectively, and further discloses a support made of PET (see paragraph [0233]), but does not specify the claimed thickness of the PET support. However, it would have been obvious to one having ordinary skill in the art to have a PET substrate within the claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the PET substrate), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Regarding claims 55 and 58-59, Kohda discloses the limitations set forth in claims, 1, 6 and 7, respectively, Kohda further discloses that the support is an amorphous carbon (paragraph [0012]), but does not specify the claimed thickness of the carbon support. However, it would have been obvious to one having ordinary skill in the art to have a carbon substrate within the

claimed thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art (Kohda discloses the carbon substrate), discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233).

Response to Arguments

9. Applicant's amendment to claim 1 overcomes the previous 35 U.S.C. 112 second paragraph rejection. Therefore the rejection has been withdrawn.

10. Applicant's arguments have been fully considered but they are not persuasive.

a. Applicant argues that the examiner has misconstrued the x-ray absorbing film (element 211a) by arguing that since the element is made of PET, layer 211a therefore contributes a negligible amount of x-ray absorption. This argument is not persuasive as there is no limitation in the claim requiring a particular range of x-ray absorption. The claim only requires that the layer is capable of absorbing x-rays and places not quantitative limitation, i.e. a particular percentage of x-ray absorption (more that 50% are absorbed, etc). Further Kohda explicitly states that the substrate/absorption layer absorbs around 5% of x-rays (see paragraph [260]).

b. Applicant further argues that the combination of the Kohda and Robinette references is not proper. However, the examiner respectfully disagrees. Kohda generally teaches an x-ray absorptive layer, but does not explicitly state that the material used is lead or lead oxide. Further, it is well known in the art to have an x-ray absorptive layer to stop x-rays from passing through the detector and irradiating areas beyond the detector. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a lead or lead oxide type absorption layer in place of the

absorption layer disclosed by Kohda in order to reduce stray x-ray radiation from passing through the detector. Further, as state above, one having ordinary skill in the art would be motivated to use the conventional lead screen disclosed by Robinette with the invention as disclosed by Kohda in order to decrease curling of the layer during manufacture. Thus there is ample motivation to combine the two references.

c. Lastly, applicant argues that the exact positioning of protective layers is not an obvious variant. The examiner respectfully disagrees. The layers disclosed by Kohda (phosphor, absorption layer etc) when exposed to moisture warp or undergo changes which affect the properties of the layer. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have included the protective layers in order to reduce the effects of moisture to increase the detector/layer lifetime.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Friday 9-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christine Sung
Examiner
Art Unit 2884

CS